



The effect of observing session duration on OPUS-RS results

A. Dincer Dogru (1), D. Ugur Sanli (1), Adem G. Hayal (2), and Mustafa Berber (3)

(1) Yildiz Technical University, Civil Engineering Faculty, Dept. of Geomatic Engineering, Istanbul, Turkey (usanli@yildiz.edu.tr), (2) Nevsehir Haci Bektas Veli University, Faculty of Engineering and Architecture, Geodesy and Photogrammetry Engineering, (3) California State University, Department of Civil and Geomatics Engineering, Fresno, CA 93740, USA

Online GPS positioning software has now a widespread interest among practitioners and researchers. Researchers recently use online software to monitor natural hazards such as landslides. The fact that this software usually employs continuously operating GPS stations of the International GNSS Service (IGS) as reference stations in the processing, the community of world-wide users is growing day by day. In the monitoring of landslides, rapid static mode of a GPS surveying is usually preferred because it is possible to have wider field coverage with only a few minutes of data and low cost ground markers. Results comparable to static positioning can be obtained with careful network design and processing strategies. Some online software such as OPUS-RS developed by the National Geodetic Survey (NGS) of the USA provides rapid static positioning engine that processes GPS data from sessions of only a few minutes. 15-minute is the recommended/standard observing session duration for OPUS-RS processing. In this study, using the CORS data operating in the US, we carried out some tests in which the observing session duration is changed from 8 through 118 minutes, and observed the accuracy change on the OPUS-RS solutions. Then we compared the results with the accuracy levels given for 15-min solutions by the NGS. We determined that there is the effect of changing observing session duration on the obtained results, and we report them in this study.